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EXAMINER

GENCO, BRIAN C

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 05/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/211,132

Applicant(s)

OHTA, SEIYA

Examiner

Brian C Genco

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-75 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-75 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 2615

Applicant's amendment filed April 25, 2003 has been fully considered by the Examiner but not deemed to be persuasive.

Applicant argues that Kyuma does not disclose correction data or the difference between theoretical data and true data as recited in claims 1, 7, and 10.

In response, Examiner reasserts that the interpolated zoom tracking curve disclosed by Kyuma is the correction data. Furthermore, Examiner directs applicant to the rejection of claim 4 where Examiner dealt with the limitation of the correction data being the difference of theoretical control data and true control data. In this rejection Examiner asserted that the theoretical control data is the pre-stored zoom tracking curves and the true control data is the interpolated zoom tracking curve. Examiner then directed Applicant to equation (1) in column 6, line 67. This is the equation for determining the next point on the zoom tracking curve, i.e. determining the correction (true) data. In this equation a difference between the current true control data and the current theoretical control data is taken. Therefore the claim limitation of the correction data is difference information between theoretical control information and true control information is met. Therefore the rejection of claims 1-10 stands.

Applicant's amendment of claims 11, 20, and 23 has overcome the 35 U.S.C. 102(e) rejection of claims 11, 20, and 23. As such new grounds of rejection are presented and applicant's arguments are considered moot in view of new grounds of rejection.

Applicant argues that Ohkawara does not disclose the use of corrected control data for controlling a moveable lens.

Art Unit: 2615

In response, Examiner directs Applicant to the rejection of claim 12 wherein Examiner pointed out that offset values are added to the zoom tracking curves when the external device is attached (wide-angle attachment) as stated in column 13, lines 52-56 and shown in Fig. 11. Thus, as shown in Fig. 11, corrected control data is used.

Applicant argues that Tanaka does not disclose an apparatus that detects the focus states in a predetermined period from a video signal and compares the focus states upon zooming.

In response, Examiner notes the rejection of claim 24 wherein Examiner directed Applicant to column 5, lines 41-67 and column 6, lines 28-46, not to column 5, lines 59-61 in reference to the claimed discriminating means. In these passages Tanaka discloses determining an in-focus level by detecting the high frequency components as is a very well known and established technique for determining an in-focus level. Further Tanaka discloses determining a direction to drive the focus lens to reach an in-focus level by detecting a change in the AF evaluation signal. Still Further Tanaka discloses that the AF evaluation processing is preformed during zooming wherein the predetermined period in which the discriminating means discriminates the in-focus drive direction and in-focus level is the length of time it takes the processor to calculate the in-focus drive direction and in-focus level.

Applicant argues that Kaneda does not disclose using the locus data to move both the zoom lens group and the focus compensation lens group.

In response, Examiner notes that in claims 46, 54, and 62 the limitation of “upon movement of said zoom lens group and a focus adjustment function” and in claims 70 and 73 the

Art Unit: 2615

limitation of “upon movement of said zoom lens,” implying that the zoom lens is moved first and then the focus lens is moved in accordance with the movement of the zoom lens. Examiner further notes that this is the conventional way of performing automatic focusing and is disclosed by Kaneda as noted in the previous Office Action and Applicant’s specification. Further, Examiner notes that there is no support in Applicant’s specification for using the locus data to move the zoom lens group.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-10 are rejected under 35 U.S.C. 102(e) as being anticipated by (USPN 6,445,416 to Kyuma et al).

In regards to claim 1 Kyuma et al, herein Kyuma, discloses stored focus compensation locus data for different object distances in reference to variator lens positions, or a “first storage means for storing control information.” Kyuma also discloses that if an object distance is found to be between two stored loci for given object distances a calculation of an interpolated zoom tracking curve based on the stored zoom locus data is performed, or a “second storage means for

Art Unit: 2615

storing correction data for correcting the control data stored in said first storage means.” Kyuma does not explicitly disclose that the focus compensation lens is then driven based on the calculated result however it is an inherent quality of the lens system to have the claimed “control means for controlling said lens drive means on the basis of the control information.” Note that the lens drive means is also an inherent feature of any zoom lens system. Note column 5, lines 45-58 and column 6, line 45 – column 7, line 9 and figures 9-11.

In regards to claim 2 see examiners notes on the rejection of claim 1. Note that if the object distance is such that it is located on a zoom tracking curve that is already stored then no calculation needs to be preformed. Therefore, the lens control system selects whether or not to use the correction data based on whether or not there is stored locus data available for the current object distance.

In regards to claim 3 it is inherent that the storage medium in the microcomputer that stores the result of the calculation of interpolated locus data is rewritable, otherwise the microcomputer would only be able to make the calculation a very finite number of times.

In regards to claim 4 the result of the interpolation calculation, or correction data and true control data, is a ratio of the difference of the stored locus information, or theoretical data (column 6, line 67, Kyuma).

In regards to claim 5 Kyuma discloses, “an image pickup element 6, an image pickup surface 5a of the image pickup element 5 (column 5, lines 34-35, Kyuma).”

In regards to claim 6 Kyuma discloses the lens is “detachably connected,” (column 1, lines 9-10 and column 6.

In regards to claims 7-10 see examiners notes on the rejections of claims 1-5.

Claims 11, 20, and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by (USPN 5,877,811 to Iijima et al).

In regards to claim 11 Iijima et al, herein Iijima, discloses a lens apparatus comprising:
moveable lens means for forming an object image on a predetermined plane while
moving along an optical axis (e.g., element 10 of Fig. 4);

drive means for driving said movable lens means (e.g., element 114 of Fig. 4);

connection means for detachably attaching an external device (e.g., elements 141 and 142 of Fig. 4);

detection means for detecting attachment/detachment of said external device between the lens apparatus and a camera unit (e.g., element 132 of Fig. 4; column 12, lines 56-62);

first storage means for storing first control information for controlling a position of said movable lens means when said external device is attached (e.g., Iijima discloses storing control information for correcting the control information of the second storage unit so as to properly communicate with the lens unit; column 12, lines 36-43);

second storage means for storing second control information for controlling the position of said movable lens means when said external device is not attached (e.g., camera side microcomputer 125, AF circuit 123, and AE circuit 124; column 11, lines 38-64); and

control means for reading out contents of said first or second storage means in accordance with a detection result of said detection means, and controlling said drive means using the first or second control information (e.g., It is an inherent feature of the invention that the contents of the second storage means are read out when the detection means detects the

Art Unit: 2615

external device is attached and to not read out the contents of the first storage means when the detection means detects that the external device is not attached, namely because it's not there to be read out. Note that the contents of first storage means is always read out; column 12, lines 30-43).

In regards to claims 20 and 23 see examiners notes on the rejection of claim 11. Note that Iijima discloses a camera microcomputer, adapter microcomputer, and a lens microcomputer.

Claims 12-19, 21, and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by (USPN 5,786,853 to Ohkawara et al).

In regards to claim 12 Ohkawara et al, herein Ohkawara, discloses a lens apparatus comprising:

movable lens means for forming an object image on a predetermined plane while moving along an optical axis (e.g., element 105 of Fig. 5);

drive means for driving said movable lens means (e.g., element 120 of Fig. 5);

connection means for detachably attaching an external device (e.g., Ohkawara discloses a wide-angle attachment lens 121 is mounted in front of the fixed first lens group 101 of the zoom lens unit 100 in a detachable manner; column 9, lines 11-13);

detecting means for detecting attachment/detachment of said external device (e.g., Ohkawara discloses the presence or absence of the wide-angle attachment lens 121 is detected by the wide-angle attachment lens mounting detecting switch 123; column 9, lines 25-27);

first storage means for storing first control information for controlling a position of said movable lens means when said external device is attached (e.g., FIG 8(b) illustrates the relationship between the focal length of the zoom lens unit and the position of the focus-compensation lens with the wide-angle attachment lens mounted wherein the data stored in the microcomputer illustrated in figure 8(b) is the first storage means; column 10, lines 32-37);

second storage means for storing correction data for correcting the control information (e.g., Ohkawara discloses that S and T are offset values to the curves with no wide-angle attachment lens mounted. Therefore, by adding these offset values the curves with the wide-angle attachment lens mounted result; Fig. 11; column 13, lines 52-56); and

control means for reading out contents of said first and/or second storage means in accordance with a detection result of said detection means, and controlling said drive means using the control information when said external device is not attached and using control information obtained by correcting the control information by the correction data when said external device is attached (e.g., Fig. 11; column 13, lines 37-56).

In regards to claim 13 the selection of whether or not to use the correction data is the successful determination of the attachment (column 14, line 64 – column 15, line 26, Ohkawara).

In regards to claim 14 and 15 see examiners notes on the rejection of claim 12.

In regards to claim 16 see examiners notes on the rejection of claims 3 and 12, wherein the logic used in the rejection of claim 3 applies to claim 16 as well. Namely that in order for the microcomputer to continually calculate the correct locus positions the memory inherently needs to be rewritable.

In regards to claim 17 Ohkawara discloses, "A wide-angle attachment lens 121 is mounted in front of the fixed first lens group 101 of the zoom lens unit 100 in a detachable manner to adjust its focal length (column 9, lines 11-13, Ohkawara)." See examiners notes on the rejection of claim 12.

In regards to claims 18 and 19 see examiners notes on the rejection of claim 17.

In regards to claim 21-22 see examiners notes on the rejection of claim 12.

Claims 24, 27, 28, 30, 33, 34, 36, 39, 40 and 42-45 are rejected under 35 U.S.C. 102(e) as being anticipated by (USPN 6,184,932 B1 to Tanaka).

In regards to claims 24, 30, 36, and 42-45 Tanaka discloses, "The present invention relates to a lens control apparatus to be preferably used in a video camera (column 1, lines 6-7, Tanaka)," wherein the claimed "generation means" is an inherent quality of a video camera. Tanaka discloses the claimed "discrimination means" in column 5, lines 41-67 and column 6, lines 28-46. Tanaka discloses the claimed "determination means" in column 4, lines 39-42. Note figure 7.

In regards to claim 27, 28, 33, 34, 39, and 40 Tanaka discloses an "image signal ... is transmitted to ... an AF evaluation value processing circuit 115 (column 5, lines 34-36, Tanaka)," wherein an "AF microcomputer 116 controls a focusing frame for driving and controlling a lens and for varying a focusing area in accordance with the strength of an AF evaluation signal (column 5, lines 45-48, Tanaka)." Tanaka also discloses, "A timing generator 124 generates a vertical-synchronizing signal and inputs it into the AF microcomputer 116 (column 5, lines 59-61, Tanaka)," wherein the AF microcomputer 116 is the claimed

Art Unit: 2615

“discrimination means” wherein the AF microcomputer 116 “detects a vertical scanning period of the video signal,” namely the signal generated by the timing generator. Tanaka further discloses, “a video camera system according to the present invention can also be implemented by inputting the vertical-synchronizing signal from outside (column 8, lines 52-55, Tanaka).” Note that the video signal generated in any video camera is inherently based on “television format information,” wherein the format information is “obtained from the imaging apparatus main body via a communication,” or in other words the format information is inputted as disclosed by Tanaka.

Claims 46, 48-51, 54, 56-59, 62, 64-67, 70, and 73 are rejected under 35 U.S.C. 102(b) as being anticipated by (USPN 5,438,190 to Kaneda et al).

In regards to claim 46, 48-51, 54, 56-59, 62, 64-67, 70, and 73 Kaneda et al, herein Kaneda, discloses the claimed invention in column 7, line 41 – column 8, line 51. In the above cited disclosure Kaneda explains to move the focus compensation lens with respect to the zoom lens in order to keep an in-focus state by selecting a locus, or zoom zone, based on the zoom lens position and the focus lens position, detect an AF value based on the amount of in-focus and to change the moving amount of the focus lens with respect to the AF value and based on a ratio of the actual zoom speed over a reference zoom speed to account for variations in the zoom speed. Kaneda also discloses the use of calculations in order to select the locus, namely the calculation of an AF value, wherein as shown in figure 11 the above determinations and calculations are continuous. Kaneda also discloses changing the focus lens moving amount stepwise, or by a stepping motor.

Art Unit: 2615

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 25, 26, 29, 31, 32, 35, 37, 38, 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over (USPN 6,184,932 B1 to Tanaka).

In regards to claims 25, 31, 37 Tanaka discloses, "The third embodiment is different from the second embodiment in that S510 and S512 are included in the flowchart. In S512, the specified number of times m is set to n' determined by the zoom speed. During low speed zooming, n' is reduced, and during high speed zooming, n' is increased. In S510, a fixed time is determined by the specified number of times m , determined by the vertical synchronizing period and zoom speed (column 8, lines 32-39, Tanaka)." Note in applicants specification page 56, lines 5-11 wherein applicant discloses that it is equivalent to perform the steps as claimed in claim 25 or to perform the steps as disclosed by Tanaka, therefore it would have been obvious to

Art Unit: 2615

one of ordinary skill in the art at the time of the invention to have implemented Tanaka's invention using either method.

In regards to claims 26, 32, 38 Tanaka does not disclose his/her invention has a detachable lens, however official notice is given that it is very well known and established in the art to make camera lens systems detachable in order to enable greater utility by providing more zooming options. Therefore it would have been obvious to one of ordinary skill in the art to have made Tanaka's invention a detachable lens system in order to increase the utility of the device.

In regards to claims 29, 35, 41 Tanaka does not disclose how his/her invention's lens system is driven, however official notice is given that it is very well known and established in the art to use stepping motors to drive lens systems in order to enable use of a common means for moving a lens. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have used stepping motors to drive the lenses in order to enable use of a common means for moving a lens.

Claims 52, 53, 60, 61, 68, and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over (USPN 5,438,190 to Kaneda et al) in view of (USPN 6,556,416 B1 to Kyuma et al).

In regards to claims 52, 53, 60, 61, 68, and 69 Kaneda et al, herein Kaneda, does not disclose that the lens system of his/her invention be detachable. Kyuma et al, herein Kyuma, discloses, "as one method of realizing more functions and higher image quality, it has been proposed to use an interchangeable lens system as a lens system for a video camera, so that it has

Art Unit: 2615

been become possible to realize a video camera capable of coping with any photographic condition (column 1, lines 28-32, Kyuma).” Note that both inventions relate to lens control in order to maintain an in-focus state while zooming. Therefore it would have been obvious to one of ordinary skill in the art to have changed Kaneda’s invention to have an interchangeable lens in order to increase the number of functions and the quality of images rendered by the video camera. Note that in combining these inventions differences in the structure of control take place, namely the introduction of separate microcomputers for the lens and camera body, as is the conventional case for interchangeable lens-type cameras, wherein the various changes to these control structures will be described below.

In regards to the claimed detection means and control means being in the camera in reference to figure 21 Kyuma discloses an AF microcomputer which computes an AF evaluation value and determines a driving speed of the focus lens and the direction for the focus lens to be driven. This information is then sent to the lens microcomputer where the focus lens motor is driven in accordance with the control data supplied by the AF microcomputer located on the camera body (column 23 line 66 – column 24, line 12, Kyuma).

In regards to the claimed detection means and control means being in the lens in reference to figure 16 Kyuma discloses the lens microcomputer has an AF program which controls the diving of the focus and zoom lenses in consideration with the sates of a zoom switch, an AF switch, and an AF value which are supplied by the camera microcomputer, wherein the claimed detection means occurs in the lens microcomputer AF program.

Art Unit: 2615

Claims 47, 55, 63, 71, 72, 74, and 75 are rejected under 35 U.S.C. 103(a) as being unpatentable over (5,438,190 to Kaneda et al) in view of (5,436,684 to Hirasawa).

In regards to claims 71 and 74 Kaneda et al, herein Kaneda, discloses to change the “moving amount of said focus lens in correspondence with the moving speed of said zoom lens,” however Kaneda does not disclose to “decrease the moving amount of said focus lens as the moving speed of said zoom lens is higher.” Hirasawa discloses to also change the “moving amount of said focus lens in correspondence with the moving speed of said zoom lens,” however Hirasawa also discloses in claims 1 and 2 to stop the focus lens whenever a speed change, or moving amount change, of the zoom lens occurs. After the zoom lens has changed its speed the focus lens then resumes focus tracking (column 9, lines 29-45, Hirasawa), wherein when the zoom lens speed is changed so that the “moving speed of the zoom lens is higher,” the control means disclosed by Hirasawa then “decreases the moving amount of said focus lens,” namely stopping it. Note that both Kaneda and Hirasawa disclose inventions to correct the moving speed of the focus lens with respect to the moving speed of the zoom lens. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have included Hirasawa’s control system with Kaneda’s in order to prevent blur “due to unstable operations before and after the change of speed (column 4, lines 32-33, Hirasawa).”

In regards to claims 72 and 75 see examiners notes on the rejection of claims 70, 71 and 74. Note that Kaneda discloses the process of obtaining an auto-focus (AF) signal and to move the focus lens in response to this AF signal (column 2, line 59 – column 3, line 6, Kaneda), wherein it is very well known and established in the art to increase the moving speed of the focus lens if the AF signal is low in order to obtain an in-focus state faster.

Art Unit: 2615

In regards to claims 47, 55, and 63 note that the control step disclosed by Hirasawa is a control step to control the "moving amount of said focus compensation lens ... inversely proportional to the ... moving speed." Note the rejection of claims 71, 72, 74, and 75.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian C. Genco who can be reached by phone at 703-305-7881 or by fax at 703-746-8325. The examiner can normally be reached on Monday thru Friday 8:00am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached on 703-308-9644. The fax phone numbers for

Art Unit: 2615

the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology center 2600 customer service office whose telephone number is 703-306-0377.

Brian C Genco
Examiner
Art Unit 2615

May 21, 2003

A handwritten signature in black ink, appearing to read 'A. Christensen', with a long horizontal flourish extending to the right.

**ANDREW CHRISTENSEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600**